

In the Claims:

Claims 1-35 (canceled).

Claim 36 (new): A gas-liquid separator for separating a gas or gases from gas-liquid mixtures, comprising:

at least two containers, a first container for separating gas from a gas-liquid mixture and a second container for receiving gas reduced or gas free liquid, the first container for separating gas from the gas-liquid mixture having an inlet port for the gas-liquid mixture, an outlet port for the gas reduced or gas free liquid at a location below the level of the gas in the first container, a separate gas outlet port for the separated gas, and a volume above the outlet port for the gas reduced or gas free liquid enough to hold a volume of the separated gas prior to discharge to the gas outlet port, the second container receiving gas reduced or gas free liquid through an inlet port having a dimension sufficient to hold a volume of liquid enough to exert pressure on the gas-liquid mixture inside the first container thereby directing the separated gas to escape from the gas outlet port of the first container while allowing the gas reduced or gas free liquid to exit at a separate outlet port of the second container.

Claim 37 (new): The gas-liquid separator of claim 36 wherein the containers have different geometric shape.

Claim 38 (new): The gas-liquid separator of claim 36

wherein the second container is an outer container and the first container is an inner container, the outer container having an inside surface larger than the outside surface of the inner container.

Claim 39 (new): The gas-liquid separator of claim 36 wherein the first container is as wide as possible and as short as possible in relation to the second container and having the gas outlet port for the separated gas farthest from the inlet port of the gas-liquid mixture.

Claim 40 (new): The gas-liquid separator of claim 36 wherein the second container connects with the first container through a channel allowing the flow of the gas reduced or gas free liquid from the first container to the second container.

Claim 41 (new): The gas-liquid separator of claim 36 wherein the first container is adjacent to the second container having a common wall partitioning the first and second containers and a common open channel between the first and second containers.

Claim 42 (new): The gas-liquid separator of claim 36 further comprising a means for preventing the recombination of the separated gas from the gas reduced or gas free liquid and for maintaining the separation of the gas from the liquid.

Claim 43 (new): The gas-liquid separator of claim 42 wherein the gas-liquid separator is prefilled with gas reduced or

gas free liquid prior to separating gases from a gas-liquid mixture.

Claim 44 (new): The gas-liquid separator of claim 42 wherein a level switch having a detecting component is placed inside the first container, the level switch connected to a vacuum pump that turns on to withdraw the separated gas when the level of the gas reduced or gas free liquid is below the detecting component and turns off when the gas reduced or gas free liquid reaches a point above the detecting component of the level switch.

Claim 45 (new): The gas-liquid separator of claim 36 further comprising a vacuum pump connected to the gas outlet port of the first container to withdraw the separated gas, the first container having an additional open port for allowing air or gas to enter the container when the vacuum pump is used.

Claim 46 (new): The gas-liquid separator of claim 45 further comprising a gas receiving container between the gas outlet port and the vacuum pump to prevent the separated gas from recombining with the gas reduced or gas free electrolyzed liquid.

Claim 47 (new): The gas-liquid separator of claim 45 further comprising a moisture trap installed before the vacuum pump to prevent liquid from entering the vacuum pump.

Claim 48 (new): The gas-liquid separator of claim 36 further comprising a level switch having a detecting component

connected to a vacuum pump, the level switch turning the vacuum pump on to withdraw the separated gas when the level of the gas reduced or gas free liquid is below the detecting component and turns the vacuum pump off when the gas reduced or gas free liquid reaches a point above the detecting component of the level switch.

Claim 49 (new): The gas-liquid separator of claim 36 wherein the gas-liquid separator is connected to a source of a gas-liquid mixture.

Claim 50 (new): The gas-liquid separator of claim 49 wherein the source of the gas-liquid mixture is electrolyzed liquid from a chamber of an electrolysis cell.

Claim 51 (new): The gas-liquid separator of claim 50 wherein the electrolyzed liquid is from an electrolysis of a combination of salt and water and the separated gas is chlorine or hydrogen or both.

Claim 52 (new): The gas-liquid separator of claim 36 further comprising valves and regulators for controlling pressure and flow of the liquid or gas.

Claim 53 (new): The gas liquid separator of claim 36 wherein the gas-liquid separator is made of a material compatible with the separated gas and the gas-liquid mixture.

Claim 54 (new): The gas liquid separator of claim 36 further comprising a gas monitor or a gas leak detector.

Claim 55 (new): The gas-liquid separator of claim 36 further comprising a feedline to a container for collecting the separated gas for further processing or recovery.

Claim 56 (new): The gas-liquid separator of claim 36 wherein the separated gas is selected from the group consisting of toxic, non-toxic, flammable, non-flammable, explosive, non-explosive and a combination of these.

Claim 57 (new): A gas-liquid separator for separating a gas or gases from gas-liquid mixtures, comprising:

at least two containers, a first container for separating gas from a gas-liquid mixture and a second container for receiving gas reduced or gas free liquid, the first container for separating gas from the gas-liquid mixture having an inlet port for the gas-liquid mixture, an outlet port for the gas reduced or gas free liquid at a location below the level of the gas in the first container, a separate gas outlet port for the separated gas, a volume above the outlet port for the gas reduced or gas free liquid enough to hold a volume of the separated gas prior to discharge to the gas outlet port, a second inlet port for allowing air or gases to enter the first container, means for withdrawing the separated gas from the first container, the second container receiving gas reduced or gas free liquid through an inlet port and exiting through a separate outlet port of the second container.

Claim 58 (new): The gas-liquid separator of claim 57 wherein the containers have different geometric shape.

Claim 59 (new): The gas-liquid separator of claim 57 wherein the second container is an outer container and the first container is an inner container, the outer container having an inside surface larger than the outside surface of the inner container.

Claim 60 (new): The gas-liquid separator of claim 57 wherein the first container is as wide as possible and as short as possible in relation to the second container and having the gas outlet port for the separated gas farthest from the inlet port of the gas-liquid mixture.

Claim 61 (new): The gas-liquid separator of claim 57 wherein the second container connects with the first container through a channel allowing the flow of the gas reduced or gas free liquid from the first container to the second container.

Claim 62 (new): The gas-liquid separator of claim 57 wherein the first container is adjacent to the second container having a common wall partitioning the first and second containers and a common open channel between the first and second containers.

Claim 63 (new): The gas-liquid separator of claim 57 wherein the means for withdrawing the separated gas from the first container is a vacuum pump connected to the gas outlet

port.

Claim 64 (new): The gas-liquid separator of claim 63 further comprising means for preventing withdrawal of liquid into the vacuum pump.

Claim 65 (new): The gas-liquid separator of claim 63 further comprising a gas receiving container between the gas outlet port and the vacuum pump to prevent the separated gas from recombining with the gas reduced or gas free electrolyzed liquid.

Claim 66 (new): The gas-liquid separator of claim 63 further comprising a moisture trap installed before the vacuum pump to prevent liquid from entering the vacuum pump.

Claim 67 (new): The gas-liquid separator of claim 57 further comprising a level switch having a detecting component connected to a vacuum pump, the level switch turning the vacuum pump on to withdraw the separated gas when the level of the gas reduced or gas free liquid is below the detecting component and turns the vacuum pump off when the gas reduced or gas free liquid reaches a point above the detecting component of the level switch.

Claim 68 (new): The gas-liquid separator of claim 57 wherein the gas-liquid separator is connected to a source of a gas-liquid mixture.

Claim 69 (new): The gas-liquid separator of claim 68 wherein the source of the gas-liquid mixture is electrolyzed

liquid from a chamber of an electrolysis cell.

Claim 70 (new): The gas-liquid separator of claim 69 wherein the electrolyzed liquid is from an electrolysis of a combination of salt and water and the separated gas is chlorine or hydrogen or both.

Claim 71 (new): The gas-liquid separator of claim 57 further comprising valves and regulators for controlling pressure and flow of the liquid or gas.

Claim 72 (new): The gas liquid separator of claim 57 wherein the gas-liquid separator is made of a material compatible with the separated gas and the gas-liquid mixture.

Claim 73 (new): The gas liquid separator of claim 57 further comprising a gas monitor or a gas leak detector.

Claim 74 (new): The gas-liquid separator of claim 57 further comprising a feedline to a container for collecting the separated gas for further processing or recovery.

Claim 75 (new): The gas-liquid separator of claim 57 wherein the separated gas is selected from the group consisting of toxic, non-toxic, flammable, non-flammable, explosive, non-explosive and a combination of these.

Claim 76 (new): A method for separately collecting gas from a gas-liquid mixture using a gas-liquid separator having at least two containers, a first container for separating gas from a gas-liquid mixture and a second container for receiving gas reduced



or gas free liquid, the first container for separating gas from the gas-liquid mixture having an inlet port for the gas-liquid mixture and an outlet port for the gas reduced or gas free liquid at a location below the level of the gas in the first container, a separate gas outlet port for the separated gas, a volume above the outlet port for the gas reduced or gas free liquid enough to hold a volume of the separated gas prior to discharge to the gas outlet port, the second container receiving gas reduced or gas free liquid through an inlet port and having a dimension sufficient to hold a volume of liquid enough to exert pressure on the gas-liquid mixture inside the first container, comprising:

introducing a gas-liquid mixture into the inlet port of the first container of the gas-liquid separator at a rate greater or equal than the flow of the gas reduced or gas free liquid from the gas-liquid separator, the liquid flowing from the first container to the second container from the outlet port for the gas reduced or gas free liquid at the first container to the inlet port for the gas reduced or gas free liquid of the second container as gas separates from the gas-liquid mixture and collects and discharges at the gas outlet port of the first container;

continuously flowing the gas reduced or gas free liquid from the first container into the second container until the separation of the gas from the gas-liquid mixture is completed,

keeping the level of the liquid in the second container above the level of the liquid in the first container to a volume sufficient to provide enough pressure to keep the separated gas collecting and discharging at the gas outlet port of the first container;

continuously collecting the gas reduced or gas free liquid from an outlet port of the second container; and,

continuously collecting the separated gas from the gas outlet port of the first container.

Claim 77 (new): The method of claim 76 further comprising cleaning the gas-liquid separator by periodically switching the connection of the gas-liquid separator from one source of the gas-liquid mixture to another source of a different composition or polarity.

Claim 78 (new): The method of claim 76 further comprising adsorbing or absorbing the collected gas.

Claim 79 (new): The method of claim 76 further comprising reprocessing and recovering the collected gas.

Claim 80 (new): The method of claim 76 further comprising neutralizing the gas reduced or gas free liquid.

Claim 81 (new): The method of claim 76 further comprising installing a number of gas-liquid separators of one type or different types, in series or parallel, for removing the gas in the gas-liquid mixture.

Claim 82 (new): A method for separately collecting gas from

a gas-liquid mixture using a gas-liquid separator having at least two containers, a first container for separating gas from a gas-liquid mixture and a second container for receiving gas reduced or gas free liquid, the first container for separating gas from the gas-liquid mixture having an inlet port for the gas-liquid mixture, an outlet port for the gas reduced or gas free liquid at a location below the level of the gas in the first container, a separate gas outlet port for the separated gas, a volume above the outlet port for the gas reduced or gas free liquid enough to hold a volume of the separated gas prior to discharge to the gas outlet port, a second inlet port for allowing air or gases to enter the first container, means for withdrawing the separated gas from the first container, the second container receiving gas reduced or gas free liquid through an inlet port and exiting through a separate outlet port of the second container, comprising:

introducing a gas-liquid mixture into the inlet port of the first container of the gas-liquid separator at a rate greater or equal than the flow of the gas reduced or gas free liquid from the gas-liquid separator, the liquid flowing from the first container to the second container from the outlet port for the gas reduced or gas free liquid at the first container to the inlet port for the gas reduced or gas free liquid of the second container as gas separates from the gas-liquid mixture and

collects and discharges at the gas outlet port of the first container;

withdrawing the gas collecting at the volume above the outlet port for the gas reduced or gas free liquid holding the separated gas prior to discharge from the gas outlet port by a vacuum pump, the withdrawal by the vacuum pump simultaneously drawing air or gases through the second inlet port to maintain the pressure at the first container;

continuously flowing the gas reduced or gas free liquid from the first container into the second container until the separation of the gas from the gas-liquid mixture is completed;

continuously collecting the gas reduced or gas free liquid from an outlet port of the second container; and,

continuously collecting the separated gas from the gas outlet port of the first container.

Claim 83 (new): The method of claim 82 further comprising keeping the level of the liquid in the second container above the level of the liquid in the first container to a volume sufficient to provide enough pressure to keep the separated gas collecting and discharging at the gas outlet port of the first container.

Claim 84 (new): The method of claim 82 further comprising cleaning the gas-liquid separator by periodically switching the connection of the gas-liquid separator from one source of the gas-liquid mixture to another source of a different composition

or polarity.

Claim 85 (new): The method of claim 82 further comprising adsorbing or absorbing the collected gas.

Claim 86 (new): The method of claim 82 further comprising reprocessing and recovering the collected gas.

Claim 87 (new): The method of claim 82 further comprising neutralizing the gas reduced or gas free liquid.

Claim 88 (new): The method of claim 82 further comprising installing a number of gas-liquid separators of one type or different types, in series or parallel, for removing the gas in the gas-liquid mixture.